/416 cont./

000 Conversely, let us imagine someone who has had a great deal of practice in registering aural impressions; will he be able to understand how someone like us could say he heard the clock strike but could not tell how often? How charitably he would smile at our audible counting! And he, too, would have to use his fingers to help out if among his number words he had no higher units than 2 and 3.

[802] Just as we are not practiced in hearing, so the Bakaïrí is not in the habit of counting with his eyes. He is still almost entirely limited to the result of touch perception. The foundation upon which further development, stimulated by interest and need, and the formation of higher units must have been accomplished had already been present for many generations, yet how slight were interest and need in primitive family life! Even in sharing, which -- we cannot help but think -- first of all demands "keeping accounts," one scarcely ever needed to count: it was give and take and the piece in the hand proved more than the fingers on the hand.

802 196 Let us turn once again to the number words of the Bakaïrí and see how their etymology, insofar as it offers any certainty, corresponds to the development revealed in the experiments. The comparison is not without value because the two studies were made quite independently of each other, and the explanation of the number words rests only on phonetic proof and linguistic comparison.

171 802 196 I do not know how to begin with "ahewáo," "3." It occurs among a number of tribes of the north, partly in greatly altered forms which nevertheless can probably be reconciled. The singular luxury of two numerical expressions may be bound up with the great uncertainty which the Bakaïrí still manifest in 3-counting: the important thing is still to determine the pairs and there is a separate word only for what exceeds the designation of the first pair, the most common case. In the difficult counting of objects that exceed "3," I heard only "ahâge tokâle," so that the two expressions are used somewhat like "twelve" and "dozen," and "ahewâo" perhaps still has something indeterminate adhering

/416 cont./

171 802 196 to it from its original meaning. For this reason it is not used for making up higher numbers. In the Kamayurá "3" is called moapüt, a word that can be definitely analyzed. It is made up of the causative mo-, mbo-, and apüt, apy, "peak," "point." The highest /417/ or peak finger is the middle finger, which marks the "3," in other words, already a natural limit, like 5 = hand. In the closely related Auetö, 1 and 3 are entirely different words than in the Kamayurá-Tupí, while 2 is the same. This is very similar to the relationship among the various Karaiben tribes.

Fortunately, the meaning of the most important number-word "aháge" is certain. It also has the greatest comparative value linguistically, for it occurs, for the most part little differentiated, among all the genuine Karaiben peoples and is a veritable guide-word. Phonetically it goes back to "atáke." It must be broken up into, first, the demonstrative a-, which also forms the pronominal prefix of the second person and refers to the nearest thing outside one's own body, and, secondly, the post-position "-take," "-sake," "-hage," "with /mit/, along with /samt/" = "there-by /da-bei/," "there-with /da-mit/," "together /zusammen/." Thus, there is nothing in it about hand or fingers, and nothing about eyes, wings, and arms.

"Many" is "aági," and even "ági," and, since I also once wrote down "ahági" and in any case there must have been a consonant between the two occurrences of a, was very probably originally identical with "aháge," "2" -- an identity which has long been lost in the linguistic feeling of the modern Bakaïrí. Consequently, the meanings "2" and "many" would have split off from the oldest meaning still demonstrable today, "therewith /dabei/," about like our "jointly /miteinander/" "together /zusammen/," and the word for the definite number and the one for the indefinite amount would be merely phonetic differentiations of the same stem form.*

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* For example, in German the same stem paar /pair/ = "2" and = "einige" /a few/ is not even phonetically differentiated, but only syntactically,

/417 cont./

500 and graphically for the person who writes "Paar" and "par"; even the syntax is not consistently carried out. Because though one says, "das Paar Handschuhe" /the pair of gloves/ or "ein Paar Handschuhe" /a pair of gloves/, one also says, "die par Leute" or "ein par Leute waren da" /the few people or a few people were there/, instead of being consistent and saying "wenige Leute" /few people/ or, likewise without an article, "par Leute waren da."

802 196 We see that the history of the Bakaïrí number-word for 2 is wholly in keeping with the presumed origin in general of the outlook regarding numbers. We only learn here in addition that the observation of how an object broken with control falls into "2" pieces was not separated for a long time from the one that in the case of an object uncontrollably broken one has in one's hand any number of pieces "together." Now, however, contrary to our psychological development, a strange ray of light falls on the etymology. The origin of the postposition "-sake" "-hage," which must mean something like "collectivity /Gemeinsamkeit/" -- to express it in a nice abstract way -- remains to be elucidated. In the material recorded there is a verbal stem which is homonymic, but which no one would connect with the concept "collectivity": chopping wood! The work of the stone ax which splits the trunk. This is at any rate interesting, and one might believe that for a Karaiben the meaning "to chop wood, pieces of wood or sticks (collectivity), together, two" could develop divergently, even though our "zusammen, samt, sammeln /together, along with, to gather/," as well as the Sanscrit sama, Zend hama, English same, that is, derselbe /in Ger./, /418/ Greek ἁμά conjointly /zugleich/, ὁμός same /derselbe/, etc. have one origin. In this case the language would be the final missing link; it would furnish proof of the origin of the first number abstraction "2" from the concrete image of something broken and would thus complete the series of conclusions from my experiments, which

/418 cont./

802 reach back only to the proof of the origin from manual work, to
196 make an uninterrupted chain of inductive evidence.

In Tupí "2" is mokõi, made up with the causative mo-; koi is translated "pair." Thus "2" = "makes pair." But what is koi? Now strangely enough, kopi -- the exact equivalent of the Bakaïrí sake -- means "to chop wood"! Between the two vowels in koi a softened consonant has been dropped; let us assume it arose from koui, kobi, which would be a very common process, and we would have the same origin of "2" as would be conceivable in Bakaïrí.

Finally I must also consider "tokále," "1." It is made up of "toka" and the augmentative particle "-le." "tõka" means "bow." Since each man has only one bow, or since many arrows go with one bow, the bow is the simplest example for "1" among all the implements. The derivation is a bit questionable because it is almost too perfect. To be sure, "toka" is so constructed phonetically that, according to the phonetic laws prevailing in the Bakaïrí, it need not change. It seems very striking that there are so few equivalents for "tokále" among the Karaiben of the north; they are fewer in number than those for "ahewão" and far fewer than those for "aháge." It is surely permissible to exclude coincidence here and to see in this circumstance, as regards language as well, evidence that actual, conceptual counting began with the "2."

II. Color Words

000 Available dyestuffs. Corresponding to the number of color words. Strange statements intelligible through etymology. Dyestuffs older than the need for color words. Use in connection with the names of animals and plants. Green never = blue-black.

196 Color words, no less than number words, show how development depends on interest.

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386 As has already been mentioned, the following dyestuffs are used on the Schingú /Xingu/.

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17| White is chalky white clay, a supply of which is kept in the
386 huts in the form of balls the size of a child's head. The women,
[283] when they spin, rub it on the right thigh, on which they twist the thread. It is simply mixed with water. It is never used to paint the body; it also falls far back for the implements and appears almost solely on the masks, the painting of which need last but a few days, on painted bark pieces, and the like.

/419/ Charcoal and soot, the berry-pulp of the genipap tree, (Genipa) and a number of resins furnish black. In order to blacken the inside of the gourd shells charcoal from the bark of the buriti shaft is used.

The yellowish-red to brownish-red loam seems to have been
[262] driven out by the urucú dyestuff. It was formerly eaten and is
524 still molded into heavy dolls for children and is rubbed on wounds
[304] for scarification.

Charcoal and soot are rubbed in directly, like the white, or
[824] they are also mixed with liquid, like the urucú. Either the oil from the pikí fruit (Caryocar butyrosum) is used, or the yellow extract containing caoutchouc from a tree of the campo cerrado, which the Bakaïrí call ochogohi and the bark of which is grated and made into an extract with water. The colors are mixed in a gourd shell or a pot or, when a hard resin is broken up with the ax blade, most conveniently in the cup-shaped depression of a stool. Urucú is always found as a paste wrapped in leaves in the little workbasket beside the hammock.

The dyestuffs available to the natives are therefore white, black, red, and yellow. The genipap-black is blue-black, the urucú-red a brick-red to orange, which, mixed with the yellow ochogohi juice, loses a good deal of its red. There are no blue or green dyestuffs.

121 The theory that the color sense developed gradually for
196 human beings, based on the fact that color distinction in language is inadequate up to a high level of culture and that blue and green in particular are extraordinarily often designated with the same word, has now been abandoned. It was found among all the primitive peoples investigated that they distinguish excellently

/419 cont./

121 the various color impressions with their eyes, that, for example,
196 they choose with normal accuracy like-colored shades out of a pile of many little bunches of wool, so there can be no question of color blindness, but that, as far as language is concerned, blue and green are mixed up with astonishing regularity. The correct solution was given by Ernst Krause (Carus Sterne). The human being, by natural inclination always most susceptible to the vivid impression of red, has found mineral and vegetable pigments in greatest abundance for this particular color. The next most frequent naturally formed dyestuff besides black and white is yellow, whereas green and blue dyestuffs are late products of the coloring technique. Color names were developed in accordance with use.

125 On a leaf of my journal Wilhelm entered colored spots of
171 ultramarine, cobalt blue, emerald green, sap green, carmine,
196 rose madder, vermillion, orange, cadmium yellow, burnt sienna, sepia, and ivory black. The attempt to obtain the names of colors by laying out vividly colored objects was a complete failure. They gave the names of the objects or these confused with the color names, and nothing stood in the way of drawing up an amusing list /420/ of these words, not one of which designated a color. A Waurá almost made me despair, and he in particular seemed to have different words for blue and green. But even if this misconception was eliminated -- and, to be sure, this was done best by the use of the definite color words already obtained from the neighboring tribe -- even if the people were really on the right track, the experiment usually became a veritable trial of patience. They would think it over, vacillate, sometimes disagree with each other; it was obvious that I was demanding something very unusual. Only the Auetö, the enthusiastic painters, proved amenable. But there was one difficulty that I was responsible for, since I not only had to become accustomed to hearing the same word for emerald green and ultramarine, but was also given other baffling information which I understood only after linguistic studies.

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B 171 192 T 171 192 They all had in common a word each for 1) red and orange, 2) yellow, 3) white, 4) black. This therefore corresponds exactly with their dyestuffs. The Auetó had the same word, the "white" of the Tupí language, for white and light yellow. The Trumaí were the only ones who had two words for blue and green; the rest designated these two colors with the same word. Among the Bakaïrí /Bacairi/, however, tamagenéng blue - black and dark brown, and green is tukuéng; it also happened that one of them would use tukuéng for blue as well, but not tamagenéng for green. Now and then the strangest things occurred. A Trumaí and a Nahuquá designated blue with the same word as cadmium yellow, a Bakaïrí and a Mehinakú /Mehinacu/ designated green just the same as red -- if one wished, one could discover the various types of color blindness among any of them one happened to be investigating.

B 171 192 196 Only linguistic research can give the key for these phenomena. For a number of the color words I am able to give the original meaning, and they will suffice to explain possibilities of this kind. It is quite certain that the Kamayurá /Camayura/ word "blue" or "green" i-tsovü-maé = parakeet-colored" from tsovü, the name of the Conurus species or parakeets. These parrots have grass green as well as indigo blue in their feathers. In Tupí the same color word is cúgui, cy, and the parakeet is called tovi, tui, çivi, çiui. Thanks to the Kamayurá form, i-tsovü-mae, the origin of çugui, already obliterated in the Tupí, is still preserved. Whether I showed the Indian a blue or a green daub, a blue string of beads or a green leaf, his answer, "parakeet-colored," was, indeed, correct. It all depends on which part of the coloring he visualized. The Auetö word i-kör-etú, "green" or "blue," perhaps corresponds to the "parrot" of the Tupí, jeru, softened from keru, so that we would have here "parrot-colored."

The tukuéng "green" of the Bakaïrí also goes back to the parakeet zugú-ri.* Now since there is a parakeet species kept in

* The name of the parakeet is onomatopoetic, hence very similar among Bakaïrí, Tupí, and Bororó.

/420 cont./

171 the houses by the natives, /421/ one which has a beautiful red
192 spot next to the beak, I assume that one Bakaïrí woman recalled
196 this little animal when, to my astonishment, she designated emerald green, vermillion, and ultramarine, one after the other, as tukuéng! This was all correct, but at that time I myself had no idea of the connection, and, shaking my head, I put the result down on paper with big exclamation marks. Luckily, the people had not derived a color word from the red arara of the lower Schingú; they would have been able to give the baffled European a palette of practically all the clashing colors with one word. Moreover, it is at least possible that the Bakaïrí and North Karaiben word for red means "the color of fruit"; in this case one person who is by no means color-blind for red might, by way of exception, also use the word for green (emerald green and sap-green), whereas the others generally used it for orange, vermillion, and carmine. The derivation of the Tupí word ti, ting, tinga for "white" from ty, urine, sap, juice, can probably be defended; in that case it would surely not be surprising if the Auetö designate white and light yellow with it.

The Bakaïrí word for white is "salt"-colored, the one for black, "soot"-colored. The latter, as has been mentioned, also serves for blue and dark brown, and, whereas green = parakeet-colored could also be "blue," blue = soot-colored could not be "green."

Thus it follows that some of the color words may have more than one meaning. It is obvious that where this is the case usage will gradually be restricted to one quality; the important thing is merely usage which develops the need for distinction. The need to distinguish colors asserts itself first of all for the dyestuff itself. It seems to be by no means usual for the color word to be derived from the dyestuff, since I am able to find this in Bakaïrí only for blue-black = soot-color; among the Tupí, for example, una black = "burned," and the form often applied to animals, pischuna, means "burned skin." This word is also used for "blue"; the brilliant blue arara has gone over into zoology as "Psittacus ararauna" = arara una. Nowhere is the word for urucú contained

/421 cont./

171 192 196 in the color word for red, nor the word for the white clay in the color word for white. I believe that the dyestuffs are far older than the need for distinguishing them according to their colors. [193] This is probable for the Bakaïrí because of two points: first, the color adjectives, with the single exception of "red, orange," do not belong to the inventory of the Karaiben base-language; secondly, their construction according to the schema t-stem-éng bears the stamp of a more recent formation.

000 I may doubtless also be permitted to use such a situation to support the earlier argument about the origin of personal color ornamentation (see pp. 172 ff.). No matter how ancient and innate the joy of color may assuredly be, nevertheless the circumstance that a need to distinguish the colors of the dyestuffs with words did not manifest itself until late speaks in favor of the view /422/ that colored ornamentation was not first used on the body for the sake of the colors. Since whatever was worn on the body as trophies or for practical purposes was actually distinguished by varying colors, which must have given pleasure, people quite naturally came to want to use them also for enjoyment, and from this time on the earliest distinctions by means of names for colors began, within these, in turn, the first certainty was gained also for the colors that were fashioned, whereas the need for distinguishing green and blue was satisfied by words which were still vague, such as "parakeet-colored."

171 192 811 One more thing must not be forgotten. The Indian does not form general judgments, such as "the trees are green, the sky is blue." Nothing induces him to analyze this view presented to him by the external world; it is of no interest to his person in any activity and is something taken for granted, such as that water is wet. What does interest him in making distinctions according to color is animals and plants. His principal application of the color names acquired is here and it is necessary to find out here how he proceeds with color names in his own usage.

171 192 825 With this in mind I looked through the list of animal names in the glossary of Martius, in which some 1300 have been collected from the total literature. "Parakeet-colored," cugui, for "blue and green" is used only a single time in the case of a

/423 cont./

B the black. If one examines the collections in the Museum für
171 Völkerkunde, which are still free of blue embroidery beads and
531 fabrics, one will understand the entire situation at a glance. There on the painted implements one finds only red, yellow, white, and black, and the feather ornamentation also shows green and blue; it shows both colors in brilliant purity, but unsorted, arbitrarily blended together in any fashion, and, with the other colors, in a luminous total picture which invites general admiration but not detailed analysis. In modern art this is called a color symphony, and it is understandable that from a symphony one does not learn scales. In the soul of the Indian
B it looks the same as in a shop window. The only blue and green
[196] he has at home is in the shape of his parakeets and parrots or similar ornamental birds, and so he takes their name for the color name, which suffices for blue and green.

B He always definitely made one distinction between blue
171 and green: he ranked blue, but not green, with black or dark.
192 Why does he not sometimes also call a green "black-dark"?
196 The only reason seems to be that cases where a green is so striking that it is used as the distinguishing feature of a designation are very rare, aside from the parrots themselves, as the lists show, and then it is always a matter of a luminous parrot-green. On the other hand, among the animals distinguished with "black-dark" = blue, the dark blue always predominates; thus, even the ararauna, probably the lightest of these, has, according to Brehm, "all upper parts along with the tail-coverts dark sky-blue"; the feathers often have even a very blackish shade on the outer part of the vane, and only when the bird is flying along bathed in full sunlight does a lighter, misty azure become notable.

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Chapter XVI.
The Paressí.

P
128 On the history of the Paressí and tribes related to them. Our visitors. Language. Anthropological. On the ethnography (dress, ethnographic yields, intoxicating beverages, dance

/264 cont./
the piahi and his disciple draw near. Ah! It is you, you have come? says Nakoeri;--Yes, it is I, I have come to see you, replies the disciple;--Yes, you did not like your drink, your beijú, your food, it is good, this is why you came, common people do not come to my village, says Nakoeri.

Then Nakoeri puts benches outside and talks outside to the disciple of the curer; first, he puts down a red bench; then he puts down two white benches; the disciple does not sit on the red bench; he brings out three red benches (five in all, with the red ones closer to the candidate, to tempt him); the candidate walks by the three red benches without sitting down (if he sat down, he would commit a crime and would not rise to piahi) and sits on the white bench. You are an upright man (u'urodo-lo), yes, you are brave, Nakoeri tells him.

Then Nakoeri fetches mandioca dough; he ties the tail of a red arara with cotton to the tip of the handle of the maracá, and he intones his song and plays the maracá; then the candidate's bench moves, and on the bench he goes inside the house; as he goes in, Nakoeri interrupts his song: You are going inside the sky, says Nakoeri.--Yes, Captain, I am, says the candidate.--Take him inside the sky, says Nakoeri to his companion, and he intones his song anew.

The bench goes to the sky, swirling; Nakoeri's companion holds on to the bench and instructs the candidate, who cannot see anyone. Here, Nakoeri's companion says, is the plaza of the old night; there, the /265/ plaza of the old heads, further on, the plaza of the old ribs, he goes on saying (15). The

15. The word "old" in this passage corresponds to the suffix püri or büri, which, as we have already seen, indicates the past of the substantives.

candidate sees nothing, he merely hears the talk of Nakoeri's companion; in the sky darkness alone reigns, and thus he does not see anyone.

/268 cont./

756 776 774 It has been mentioned that in certain cases both the piahi and the yamũra can take the shadow of a person who has offended them; but only the piahi can return what he took; and, conversely, he can return the shadow stolen by a yamũra.

825 196 This leads us to mention Topiehe, a Mato Grosso bird which we were unable to identify and in whose name there is probably the same radical as is found in piahi and epiwado.

825 774 756 755 Topiehe, when killed, steals the person's shadow; this is why Topiehe is not killed; it takes a person's shadow far away; then the person dies. The house of Topiehe is in the sky; the Topiehe does not die /269/ really, says the piahi. The one who (seemingly) killed the Topiehe becomes cold; when he reaches home, he falls ill; then the piahi is called, and when he arrives, the bench is washed very clean; then the tail of the arara is tied with cotton to the maracá. While the curer is doing this, no one speaks, and the fire is put out; the bench is placed at the door, and the curer holds it, plays the maracá, and then shouts. When he is not near, yamũra does not come quickly. When he arrives, the bench moves and if the curer does not make it fast, it runs away; this is why the curer does not let go of the bench, on which sits yamũra, with whom the piahi converses: Don't you see, relative, I am calling, I am talking, I am singing, I am shouting, says the curer. I did this, because he committed this crime (inutudohe), answers Topiehe. -- He is a human being, he does not know what he is doing, that is why he killed you, answers the curer. When the piahi spoke, Topiehe said: Take him. When the cotton was grasped our shadow is above and then the murderer gets well. After the return: I am going away, I heard your shout and this is why I came, says Topiehe. When Yamũra goes away, the people talk, the curer goes to the patient; he was sick because he killed Topiehe; Topiehe is not to be killed, says the curer.

/272 cont./

829 The idea of "Lord" appears often, but it is not easy to
776 understand what it means. When a Bacaeri states that the white
825 man is the lord of the mirror, naturally he means that he first saw this object in the hands of the Carahibas. What does he actually mean, however, when he states that the lord of the rain is the parakeet?

776 It also seems natural that, if certain things have lords, the latter be paid or granted some token of respect or homage. Only one such case is mentioned, however; those who make hammocks, before using them, sling them outside the house in homage to the Coandú /coendou/, lord of hammocks, so that their hair will not turn white. A story about a great cataclysm brought about by the death of the newt, lord of the wind, is also told.

In view of all this, the following list of lords is of minor interest, since it will only be of use if new comparative data become available:

776 The lizard is the lord of sleep; the fox, the lord of fire;
825 the parakeet, of rain; the newt, of wind; the curiango /Caprimulgus/, of the fishing hook; the urubu is lord of the bench; the sea snail, of the sun; the sucuri, of the fishing net; the heron, of the boquité (a type of basket); the uga (a kind of lizard), of the grater; the porcupine is lord of thorns; the kingfisher, lord of fish; the coendou, lord of smoke and also of the buriti net; the deer is lord of the mandioca, etc.

825 /273/ This shows that the Bacaeri does not make a very
774 great distinction between human beings and animals. For
196 "to wish" they use two words: ieyi, first person, which is applied to an animal raised by a human being; and anayido, a generic term, simply the plural of anayi, which means "who" and "someone." There is nothing strange about this, considering that human beings and animals have shadows and speak in the same fashion.

824 The trees also have shadows and speak.
774